ICT Update
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Internet and radio develop farms and businesses in rural Zambia

Agro-dealers use cell phones to keep farmers up to date

Short video animations provide agricultural advice to farmers

Extension & advice

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Editorial

Support for advisory services

ICTs have become essential for delivering agricultural information to rural farmers. Specially developed software collates and distributes market data to farmers' cell phones. Radio broadcasts detail the symptoms and treatment for crop diseases. Videos demonstrate pest control techniques. And web pages provide satellite imagery and analyses of local soil and vegetation. The technology provides the NGOs, research institutes and international organisations that have taken over extension services from underfunded government departments with the means to reach remote producers quickly and efficiently.

Rather than wait for outside help, the community developed a solar-powered satellite system to connect them to the internet

ICTs also make it possible for farmers to find and share information with other communities. The remote village of Macha in Zambia, for example, rarely received visits from extension services. Like rural areas in many ACP countries, it had limited access to electricity and poor quality roads connecting to even the nearest market opportunities. But, rather than wait for outside sources to come along and improve their situation, the community worked together to develop a solar-powered satellite system to connect them to the internet.

By the time a cell phone network arrived in Macha, they already had internet for two years and had extended it throughout the village via wireless network. A new radio station, along with social media, is helping the community deliver advice to other villages who want to set up similar initiatives. So far, eight other communities, including one in Zimbabwe, are developing their own services using Macha's unique model to deliver information services.

Similarly, a project in Madagascar is using ICTs to extend the reach of extension material and improve the efficiency of agricultural advisory services. Advisory for Change in Agriculture in Madagascar (AKAMA) works within a network of advisory institutions and agencies to gather documents and data currently scattered around the web, and concentrate them into one database.

The organisation adapts the information to make it more relevant to the country's farmers by providing it in the local Malagasy language and publishing it on the web, where extension officers and decision makers can also find it. AKAMA produces audio and video material based on the information for NGOs, cooperatives and individual farmers to use to improve the country's agricultural systems.

The Alliance for a Green Revolution in Africa (AGRA) uses an existing network of specialists to support extension services. Its Agro-Dealer Programme (ADP) trains the people who sell agricultural inputs – such as fertiliser, seeds and pesticides – to provide farmers with specific information relevant to their area and crop type. The farmers regularly visit agro-dealers in the course of their work anyway. The advantage of using the dealers is that they can supply the inputs along with advice on how to use them correctly.

ADP has trained more than 10,000 agro-dealers in 11 African countries, including Nigeria, Ghana and Malawi. The project has developed a database with contact details of each dealer, plus the GPS coordinates showing the location of each business. The information, available on a Google Map, is useful for other suppliers and transporters involved in the local value chains, while ADP can also use the database to alert dealers to new developments, such as the latest pest control information, through SMS messages sent to their cell phones.

There is, of course, still a need for the face-to-face contact and detailed explanations that extension officers working in the field provide. But these initiatives have developed methods of using technology to increase the reach of advisory services, to provide support to existing institutions and to deliver information to farmers as and when they need it. ◀

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Integrated approaches

Extension & advice

Most farmers in ACP countries learn their trade from an early age, by listening to and watching their parents, grandparents and others around them. They continue to improve and adapt their skills over the years through practice and experimentation, and from sharing experiences and ideas with fellow farmers. They rely on this mix of information when they have to make decisions that will affect their limited resources. It is essential, therefore, that they have confidence in the information they receive.

Farmers often listen to radio, join community discussions and, in recent years, use cell phones to access advisory services. Telecentres equipped with computer and internet access are also spreading across Africa. And most farmers are open to exploring new methods and innovations that could improve their productivity and income.

However, technological advances should only be seen as a tool to improve the delivery of advisory services. ICTs cannot replace the traditional system of face-to-face interactions between farmers and extension workers. These tools make it possible to give farmers information quickly, when it is needed, but it has to be in a format that can be easily understood and applied.

FARA, for instance, has developed a system to facilitate the exchange of agricultural information and innovation. RAILS (regional agricultural information and learning system) encourages those involved in agriculture - from farmers to extension workers and researchers - to continue learning more about the subject.

The information systems used are practical and focused on how people can apply them, and the various methods are only adopted and promoted if they meet the specific needs of the farming community. The intention is to develop the skills and knowledge of the community so that they will be able to operate beyond the support of the project.

RAILS is now entering a new phase where it is investing in methods other than the internet to reach farmers. FARA has worked for several years to establish national learning teams that can encourage information exchange, and promote agribusiness opportunities and investments. The project is building on the 'question and answer' service developed by ISICAD and CTA.

The intention is to connect farmers, extension and agricultural researchers through targeted services. For example, an individual farmers can ask a specific question to a trained extension worker, who then sends emails or calls a number of research institutes to find the most relevant answer. The farmers pay for the service based on their level of satisfaction with the responses.

This method uses technology to access a combination of indigenous and scientific knowledge. Farmers are provided services through social contact – the extension worker – which gives reliability and accountability. The extension workers are able to reach more farmers with reliable and current advice as research partners regularly update their information in a format that is readily applicable to the situation found in many communities.

As the extension workers reach greater number of farmers, they are also linked with colleagues working elsewhere in the country and across the continent, along with researchers and others in the agribusiness sector. The extension worker, therefore, becomes part of a larger team, providing the link between researchers and policy makers and the communities.

Youth potential

But the most promising aspect of the RAILS expansion, known as eRAILS II, is the involvement of young people in the provision of agricultural advisory services. They have the potential to develop more integrated extension services using ICTs as they are often more tech savvy and open to learning new ways. As such, eRAILS is currently working with agricultural college graduates who can act as national facilitators of advisory services to communities. They provide a communication link between farmers and researchers, and can assist farmers to make better use of the opportunities afforded by ICTs.

Young people have the potential to develop more integrated extension services using ICTs

FARA is encouraging African governments to invest more in an integrated system that maximises the combined use of research and extension. It also encourages the private sector to provide targeted advisory services to rural communities. There are several examples of businesses already providing such services, using ICTs to deliver agricultural advice and market data, and there are even some communities who have decided to develop their own information networks [see page 4].

There is, of course, no single solution to providing improved extension services. It is not a matter of simply delivering tools and services through internet, radio, or cell phones. We have to use all the available tools and make them part of the mix of resources that the farmers already know and trust. ◀

JOERG BOETHLING / LINEAIR

Extension workers need to be part of a team that includes policy makers, researchers and communities.

Technology retains talent

With little access to formal extension services, a rural Zambian community set up an internet connection to develop local agriculture, education and energy facilities. The community is now using local radio to encourage other villages to do the same.

There have been very few studies into the effects access to broadband internet can have on agriculture in rural Africa. The reason for that is simple: broadband internet is still very rare in rural Africa. But in Zambia, a rural community, called Macha, does have broadband. There, internet and agriculture – and much more – combine as part of an integrated project to inspire the local community to reach its collective potential.

Macha, in southern Zambia, is 70 km from the nearest town, Choma, and 380 km by road from the capital city, Lusaka. The village is set in open savannah woodland around 1100 meters above sea level, and receives seasonal rainfall. Traditional villagers live in small, scattered homesteads. There are no commercial farmers or industries in the area.

Traditionally, people have earned their living here through subsistence farming, mostly growing maize. Although agriculture always sustained the community, cultivation practices had not changed in many years. NGOs and internationals consultants came and went. And Macha remained a typical rural area with bad roads, scattered water pumps, limited electricity, patchy mobile phone coverage, dilapidated schools and health facilities.

In the past, the community relied on oral reports from travellers for its news and information about the outside world because Macha had no newspapers and no outside radio broadcasts reach this remote location. They rarely had visits from extension officers, so the travellers were mostly family members, or traders arriving from urban centres to buy the excess crops. Cell phone coverage only arrived at the end of 2006. But, by then, Macha was already connected to the internet.

In 2003, in a cooperative effort, community members came together to build a wireless network that would connect Macha to the internet via a satellite connection. They started with a VSAT link that offered download speeds of up to 128 kbps. The service soon became so popular that the bandwidth could not cope with the volume of internet traffic. The problem eased in 2011 when Macha upgraded the connection to a microwave link via a newly available cell phone network, which offered speeds of 2 Mbps, making it truly broadband.

The internet link is further distributed throughout the community via a wireless local area network (WLAN). There are more than 100 wireless access points, offering connectivity to both offices and homes. Surveys and measurements show that Macha has an active internet community of around 200 individuals, 67% of whom are on line for more than three hours a day. Half the users access the internet from home, and 71% use it frequently to surf the web for educational purposes.

As well as having a channel to communicate with friends and family outside of the community, access to the technology produced a discernible difference in agricultural practices within the first year. One community member found information on the web about sunflower farming, and decided to give it a go. A few years later, sunflower farming has blossomed in the village and it is now the community's second most important cash crop.

Professional support

From the outset, the community took the view that the broadband project should be developed by people living in the area. They started MachaWorks, with so-called 'local talent' taking the lead. They take whatever steps the community deems necessary, and implement solutions that work within the context of their own situation. In this way, the community overcomes two fundamental factors that often inhibit rural development projects – the lack of capacity to attract and retain talented local people, and the high distribution and transaction costs caused by inadequate infrastructure and distances from urban centres.

For example, when a talented and innovative head teacher leaves a village school because there are few possibilities for developing his or her skills in the local area, it becomes harder to retain health professionals and entrepreneurs in the community as they see less opportunity for their children. Also, many one-off interventions and pilot projects fail because they tend to address just a single aspect of rural development, such as agriculture or education, not realising that their implementation might improve some parts of village life, only to create deficiencies elsewhere.

By 2004, Macha had developed the internet connection for the village. While MachaWorks is concerned with the overall development of village services, eight 'focus units' concentrate their efforts on particular sectors within the community, including transport, bio-energy, building,

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LINKNET

education and health. One of these eight units, known as LinkNet, focuses on developing rural internet networks by training ICT engineers and students, and raising awareness of the benefits of ICTs in other communities.

The initiative inspires people in rural communities to reach their collective and individual potential. It aims to make it attractive for talented people to stay, and even encourage those who have left to return to rural areas. There are several examples of this in Macha. Oscar Kaate, for instance, came back to the village after struggling to make a living selling hair extensions in Lusaka. He is now a network server engineer for LinkNet. Kennedy Hamatunga, works for MachaWorks' hospitality department after gaining experience working in hotels in Livingstone, Zambia's tourist capital. Michael Mweembe chose not to leave the area but stayed in the area to build houses for the ever-expanding activities. He is now a building supervisor.

Partnerships

Macha Works shows that people's decisions to stay in rural areas are linked to opportunities to learn and develop. A good standard of education and an entrepreneurial learning environment are key factors that help villages and small communities to hold on to their local talent. The process evolved in three fundamental steps: 1) internet connectivity, which expanded relationships through the ability to communicate; 2) encouraging the use of locally available skills; 3) support of community initiated ideas.

People in the community describe the introduction of the internet as 'when the light went on'. Many had felt they would have no opportunity to explore beyond their limited geographical area, but exposure to the internet brought new opportunities, and provided the means to build the relationships to act on them.

Because the whole community was involved, with its health institution, schools, entrepreneurs and professionals, the high cost of internet connectivity (which is far higher than in most developed countries) is shared, and the expense becomes bearable. Institutions and donor-organisations came together in public–private partnerships to provide funds for the initial investment. Donors also subsidised the sending of large consignments of second-hand computers for use in health and education programmes. Users pay through a voucher system, which varies according to how much they use. This has enabled LinkNet to break even over the past few years in their not-for-profit-not-for-loss endeavour.

With the combined efforts of each of the eight focus units in Macha, and their ability to use the internet to make connections and build relationships with government and other organisations., they are now enhancing the local infrastructure. Water supplies and energy sources are being developed in the community to ensure that it will continue to grow. Each of the units, along with other institutions in Macha, has set about developing the skills and services on offer in the community and in neighbouring villages.

Macha Works shows that people's decisions to stay in rural areas are linked to opportunities to learn and develop

For example, the village is connected to the electricity network, but there are frequent power cuts. So Macha Works is supporting the construction of a bio-oil plantation of 500 hectares on

Macha Works on social media

Twitter
➜ http://twitter.com/machaworks (@machaworks)

Facebook group
➜ www.facebook.com/group.php?gid=7101983147

You Tube channel
Macha Broadcasting
➜ www.youtube.com/machabroadcasting


LINKNET

previously unused land. The aim is to be energy self-sufficient, prevent soil erosion and start spin-off businesses such as soap production.

Information spread

The broad inter-disciplinary approach of Macha Works has led to economic improvement throughout the community. New buildings have been built and local people have been given the opportunity to take part in training programmes in nursing, agriculture, education, communications and other areas. This progress was possible because all the ideas, projects and improvements are fully managed by local people. They are put into place as part of a gradual process; first by developing awareness, then concentrating on acquiring the necessary skills, and only then implementing the plans and taking on operational control.

The sensitisation phase involves a lot of interaction with local, regional and national leaders, especially with traditional leaders. This stage aims to bring together everyone concerned and to encourage 'local talent' to get involved and catalyse progress. As the people then develop their skills and learn more about a particular subject, whether agriculture or health, the talented individuals work with the community, to build the necessary infrastructure(s) and takes charge of the project's operations.

This whole process, within its specific cultural setting, can easily take more than five years. But the gradual and grounded approach adopted by Macha ensures that the aims of each project are attainable, sustainable and can be replicated by others. It is an approach that helps to ensure support from the majority of people, all of whom are aware of the local situation, the obstacles and opportunities.

For instance, in 2004 Macha was looking to speed up the process of distributing the information acquired through the internet to all members of the community, particularly those who did not yet have web access. For seven years, they lobbied for a local radio licence, then in 2011, the community FM radio station finally started broadcasting. It was able to reach villages within an 80-km radius. Local people decide what programmes to broadcast, based on the priorities of the day and their own research. This participatory approach proved very popular, and encouraged the villagers to set up a video channel on YouTube to spread their ideas and successes further afield.

Local content

To support the development of skills in the community, Macha Works established a training institute in early 2004. Known as the LinkNet Information Technology Academy, it was initially housed in storage rooms, and later moved to purpose-built facilities. More than 400 students have since graduated with internationally recognised certificates in computer literacy or advanced ICT engineering skills.

The community is also working with tertiary level institutes such as the University of Zambia. This has brought many national and international students to the area to work on applied research projects in various aspects of rural development. There are now projects covering agriculture, energy, engineering, transport, finance, and management.

In 2009, after planting 600,000 Jatropha trees as part of the bio-oil project, people from other communities started to notice what was happening in Macha. They too wanted to set up a bio-oil plantation, so they received training from Macha villagers, planted seed, and now another 400,000 trees have been planted.

While most internet users in Africa access material that originates outside the continent, Macha has encouraged more intra-village conversation, mainly through instant messaging on social networking sites. Facebook and Twitter are the most popular, accounting for about a quarter of all internet traffic in Macha. Analyses show that more than half of the messages sent were between local users.

Since it was established, Macha Works has created about 300 full-time jobs and 700 seasonal jobs. The community is thriving, with lots of activity in other areas of life too. Many people are building new houses or setting up businesses and support activities. As word of success spreads, other villages are starting to adapt and replicate the processes.

Seven rural communities in Zambia and one in Zimbabwe have now started their own cooperative activities, including developing rural internet access. These have come about through working with, for instance, the Zambia House of Chiefs, and through an active, open invitation to other communities to be supported and trained. As many as 40 other rural communities in the country are either in the process of learning more about Macha Works, and establishing their own <Community Name> Works, or already developing local skills to put the holistic programme into action. ◀

Accessible advice

A local language website gathers content from a wide range of sources and presents the information to Madagascan farmers and extension officers in a variety of formats.

Extension & advice

A number of local organisations, including Farming & Technology for Africa (FTA), have been working for several years to develop methods of using ICTs to reinforce extension services and improve the farming industry in Madagascar. In April 2011, they launched a website called the Advisory for Change in Agriculture in Madagascar (AKAMA), which provides information for farmers in the local Malagasy language.

Initially, the site collected details of projects, organisations, institutions and farmers' associations that practise, disseminate and/or provide agricultural training, along with the types of courses offered. The themes covered on the site relate to both general and more specific agricultural topics, from natural resource management, to processing, post-harvest preservation and marketing.

The website presents the information with text, graphics, audio and video in Malagasy in an effort to be as accessible as possible. The idea is that small-scale farmers would be able to research any agricultural theme in the format most suitable for them, and even download multimedia content for later viewing or listening.

A video production has already helped farmers increase their yield of sweet potatoes.

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However, estimates show that only 2% of the population in Madagascar has access to the web. The internet does not yet cover the whole country, and is often too costly if a connection is available. Low levels of literacy make it difficult for farmers to make good use of text on the web, even if it is in the local language. Because of this, AKAMA has started working with farmers' associations, related organisations, the media and existing projects that have the financial and logistical means to convey the information to farmers.

Currently, much of the information that could be interesting to farmers is scattered all over the web, which makes it difficult to find. The quality of information varies greatly and is often presented in a means that is not readily available to farmers. By working with a network of organisations, AKAMA hopes to highlight what information is already available and, just as importantly, point out what is missing, lacking quality or difficult to access.

The website, therefore, is not only intended to be used by farmers, but by anyone involved in the sector, including decision makers, to guide them and to help them understand the weak points and the strong points of the agricultural system in Madagascar.

Improved production

AKAMA is much more than just a website, however. The main aim is to supply multimedia content. The web is only the means of diffusion. The team see the internet and multimedia as potentially very efficient alternatives to traditional extension practices. Many extension officers have to travel large distances (tens of kilometres, often on foot). They can waste a lot of time trying to find village leaders and organising community gatherings. And they can run up a lot of expenses trying to find a solution to farmers' problems, which in the end is not appropriate as it requires more specialised knowledge. But the technology reduces distances, waiting times and costs while still offering farmers the benefit of effective information.

The website was developed by just two people from FTA, a web designer and a project manager, who has good knowledge of agriculture. Their challenge was to find a way of creating a low-cost, attractively designed portal that was stable and readily available. They decided to use WordPress, a free-to-use open source content management system originally developed for blogging. It is relatively simple, flexible and offered enough features to meet the needs of the project. Several partner organisations and institutes contributed to the original conception and to the selection of content presented on the site.

The website went live on the web in April 2011 and was advertised for a month on local and national radio stations as well as in local newspapers. It is mainly extension workers, larger-scale farmers and agricultural development professionals who currently use the site. Many users also send suggestions and questions, which the team try to deal with and incorporate in regular updates. Farmers meet with partner organisations to provide further feedback.

These are still early days, too soon to tell if the site has already made a difference to the long-term processes in which farmers are involved. However, a pilot study introduced farmers to a video describing cultivation techniques for sweet potatoes. Yields have already improved, giving the team high expectations for the longer-term benefits of the site.

In the near future, AKAMA plans to continue adding content to the site with more video and audio resources, which are more useful for farmers, especially those with low literacy levels. Ideally, farmers and extension agents will be able to access the information, on and offline, from centres spread around the country. The team hopes to further develop its network of partners and contributors to help the portal evolve and make it the foremost agricultural resource in Madagascar. ◀

JOERG BOETHLING / LINEAIR

Input from experts

Agro-dealers in several African nations use cell phones to network with other traders and advisors, and keep farmers updated on the latest agricultural techniques.

Extension & advice

Aisha Zachariah, from Tamale in northern Ghana, used to grow seed to sell to other farmers in her community. She wanted to expand her business and provide other merchandise such as fertilisers and crop-protection products. Aisha knew she would first have to improve her technical and business management skills, so she followed a training course run by the Agro-Dealer Development Programme, an initiative of the Alliance for a Green Revolution in Africa (AGRA). She has since opened a shop selling a range of agricultural inputs, and is also offering valuable information on crop production.

Aisha is just one of thousands of people trained by the Agro-Dealer Development Programme (ADP) since it was established in 2007. The project operates in 11 African countries, including Ghana, Mali, Mozambique and Uganda, to train agro-dealers (entrepreneurs selling agricultural products) to provide the farmers that visit their shops with advice on new cultivation techniques and good agricultural practice.

'This is a market-based approach to give farmers access to the skills and inputs they need to enhance productivity and increase income,' says Kehinde Makinde, a programme officer with ADP in Ghana. 'It is not enough to provide only information, as extension officers do, or to provide only inputs, as traditional agro-dealers do. Farmers need to have access to both if they are to be able to use the inputs effectively and get the best return for their investment.'

The advantage of training agro-dealers to deliver crop information is that they come into regular contact with farmers and are also aware of the local conditions, such as soil quality, climate and common pest threats. They can give farmers very specific advice on how to cultivate and treat their crops to achieve the best results in that area. But ICTs also allow the agro-dealers to provide the latest market prices and put farmers in touch with buyers, processors and transporters.

Mapping strategy

After their initial training, which involves setting up a network of information sources, the agro-dealers stay updated using cell phones to

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communicate with other dealers, local associations and other information services. They often use their phones to organise delivery times with suppliers, ask for and share advice with colleagues, and receive regular automatic SMS messages containing market data.

The ADP developed a database of agro-dealers that they use to quickly send SMS alerts, either to all the dealers or to selected smaller groups. The system has been used to inform dealers about the availability of new seed stocks and deals offered by suppliers. The database has become a directory of agro-dealers that includes information on the types of products they sell, whether or not they have received training, the GPS coordinates of their location and contact details.

The team is now using the location data to develop maps of agro-dealers and publishes the data on Google Maps. The project team can then use maps to identify areas where there are fewer agro-dealers, which helps them to plan future training services.

All the agro-dealers are trained locally, as near to their shops as possible in order to minimise the time they spend away from their business. Experts from AGRA and other partner organisations, such as the IFDC and CNFA, deliver the training courses.

The courses are flexible and can be taken as a series of short sessions spread throughout the growing season, or in a single module lasting around six days. At the end of the course, dealers receive certificates that are recognised by their national regulatory authorities. This ensures that government departments are kept informed about the courses, and know which dealers have been trained. The ADP also works with smaller agro-dealer associations, helping them to set up and offer training courses to individual agro-dealers, and eventually to other associations.

The ADP team cooperates with colleagues on other AGRA programmes, especially those working with farmer organisations and other small and medium-sized enterprises. The various programmes combine their electronic databases to identify and develop connections between the various parties involved in agricultural markets. Farmers are encouraged to operate in organised groups to buy inputs in bulk, and negotiate prices for the larger, combined quantities of goods.

Another aspect of AGRA's work is tracing the value chains for various commodities to ensure that information flows to everyone involved in the system, starting with the researchers in the university agricultural departments. The project team links plant breeders and soil scientists with seed production companies, and continues the connection through to the agro-dealers themselves by providing them with information on best agricultural practices which they can pass on to farmers.

Risk management

The agro-dealers are encouraged to set up demonstration plots, establish information centres and organise input exhibitions as methods of delivering practical information to farmers. They also have a role in creating awareness of issues such as pest-management techniques that may arise in the course of the growing season.

'The agro-dealers learn that their business is dependent on the farmers they supply,' adds Makinde. 'If they provide wrong or inappropriate information, the farmers will soon realise this, and stop buying from that particular dealer. The training course also shows the dealers that they should broaden their range of products in order to give farmers a greater choice.'

If they are to provide more products, the agro-dealers need extra financing. It can be difficult for small-businesses to obtain credit from a bank, so the ADP acts as a loan guarantor with a number of financial institutions to. But for dealers operating in rural areas, there is often no bank nearby. In such cases, the ADP makes use of mobile banking services, ensuring that the loans go directly to the cell phones of dealers.

'We have to work with the banks to help them understand that the perceived risk of lending to small agribusinesses is much greater than the actual risk,' explains Makinde. The banks are starting to see that now because more than 80% of loans are repaid on time, and that figure is as high as 95% in some areas. The loans and electronic payments have introduced many agro-dealers and their associations to banking services for the first time.'

Augmentation

The agro-dealers are not expected to replace extension officers. AGRA hopes that their newly-trained entrepreneurs will complement the work of other agricultural information services. 'Both methods are necessary,' says Makinde. 'The extension system in Africa is very weak. Extension officers are not adequately mobilised by their governments to meet the information needs of farmers. The ADP develops skills and institutional strengths and ensures that the latest information gets from the research institutes to small-scale farmers.'

Electronic payments have introduced many agro-dealers to banking services for the first time

So far, AGRA has trained more than 10,000 agro-dealers. 'It has been quite an achievement to train so many,' says Makinde, 'but it is still a long way from what we need to be able to get agro-dealers close to every community of farmers.' It remains a challenge to develop agribusinesses in very remote areas where there are no roads to deliver supplies on a regular and dependable basis.

AGRA's research has shown that, on average, Ghanaian farmers, for example, have to travel 9 km to reach their nearest agro-dealer, with some going as far as 15 km. The next step of the agro-dealer programme is to expand the input businesses in these under-served areas. And Makinde is confident that their system can make a difference to farmers.

'In the places where we have worked we have seen major changes in the lives of farmers and the landscape,' he says. 'The dealers who have had the training show greater understanding of their clients' needs. But most importantly, the farmers no longer have to go as far to get the inputs and information they need. For instance , the average distance they now travel is down to 6 km in some parts of Ghana, and we will continue working to keep improving conditions for farmers.' ◀


KATE HOLT / HH

Trained agro-dealers can provide farmers with the products they need, and give practical advice on how to get the best use out of them.

Animated information

Animations developed to be viewed on cell phones provide a unique way of delivering agricultural advice, as the short videos can be adapted for a variety of languages.

Extension & advice

Scientific Animations Without Borders (SAWBO) develops educational materials designed to help learners with low levels of literacy in developing nations. They use three-dimensional animations to convey agricultural and medical advice that can be used to improve the quality of people's lives. These two-minute animations can be viewed on a range of electronic devices including cell phones with video capacity. Using Bluetooth technology, the animations can be transmitted from cell phone to cell phone. The voice-overs for each animation can be easily adapted for a range of local languages.

The animations are shared on an online journal called the Sustainable Development Virtual Knowledge Interface (SusDeViKI). This journal specialises in educational material for semi-literate learners in impoverished settings. Educators can easily search for, view, and download SAWBO's animations onto their computers. They can then transfer them onto cell phones for use in the field as part of ongoing educational programmes. The educational animations can be left on the phones of community members, and viewed at any time.

One of the big problems with many development messages, especially those created and tested in the academic community, is that these ideas are often placed in peer-reviewed journal articles, making it very difficult for educators to access these materials in a format that would allow them to take the information to target populations in the field. But SAWBO's animations have overcome this barrier and are easy to access and distribute.

When we hear the term 'animation', many of us will think of Saturday morning cartoons, but the medium has come a long way in the last few decades with the advent of high-quality three-dimensional animations. One of the great advantages of animation is that it can be used to show concepts and techniques that are often hard to capture with live-action filming. This art form is now being used extensively in the medical profession to show biological processes. And SAWBO's videos mark the first time that this technology has been used to help low-literate learners, and to bridge the gap between the academic literature and practical educational tools.

Since its inception, SAWBO, an initiative of the University of Illinois, has produced four animations. Three focus on pest control strategies for dealing with insects that attack cowpea plants, and one deals with cholera prevention.

The cholera prevention animation can be viewed in many languages, including Haitian Creole and Hausa from Niger. Half a dozen new animations on both agricultural and medical subjects are currently being developed for both agricultural and medically related issues.

The scripts for the animations draw on scientific literature, extension documents, and material from international aid agencies that has already undergone considerable testing and previously been used educational in programmes.

Barry Pittendrigh (pittendr@illinois.edu) is an endowed chair professor at the University of Illinois at Urbana Champaign (www.illinois.edu), and a researcher with SAWBO, together with **Julia Bello-Bravo** (juliabb@illinois.edu), **Francisco Seufferheld** ((fjseuffe@illinois.edu)

Related resources

The cell phone-ready versions of the videos are available on the web:

Scientific Animations Without Borders (SAWBO) Facebook page
➜ http://goo.gl/XBULf

SAWBO YouTube channel
➜ www.youtube.com/user/SAWBOsm

SAWBO Homepage
➜ http://sawbo.illinois.edu/

Sustainable Development Virtual Knowledge Interface SusDeViKI
➜ http://susdeviki.illinois.edu/

Once an animation is complete, the team works with partner groups, and experts in the relevant field to make sure the animations are technically correct. They also work with partners to translate the scripts into many major world languages, including French, Spanish, and many local and regional languages and dialects.

To date, SAWBO has worked with several partner groups in West Africa who are working on the problem of protecting cowpea crops from insect attack. The animations are being tested and used as part of a wider educational initiative taking place in five countries and aimed at on protecting dry grains and pulses. This project is funded through the CRSP USAID research programme.

Several strategies for deploying the animations are being tested, including transferring the videos from cell phone to cell phone, as well as distributing disks to farmers' groups and farmers field schools. There are also plans to distribute the disks to video viewing clubs.

As the cost of cell phones decrease, especially ones with video and Bluetooth capacity, SAWBO's focus is to research the most effective networks for dissemination, so that when new animations are completed, the content can be efficiently distributed. ◀

Agricultural information exchange

Many individuals, local and international groups, and research institutes around the world gather information on agriculture. They all want to get their advice and information to farmers, who can then apply new techniques to improve production, increase income and achieve food security for their communities.

Extension & advice

TECA's information on technologies and practices can be downloaded or printed and distributed to farmers.

However, it can be difficult to ensure that farmers get accurate information that is relevant to their specific needs at the right time and in the right way. ICTs can be very effective in delivering timely and applicable information to small-scale producers, even those living in remote areas.

TECA is an internet-based platform for the documentation and exchange of agricultural technologies and practices. Developed by the United Nation's Food and Agriculture Organization (FAO), the platform strengthens the link between researchers, extension officers and farmers by providing practical advice aimed specifically at helping small-scale producers.

TECA (http://teca.fao.org/home) has two main features: Technologies & Practices and Exchange Groups, or online forums where producers can share their own advice and experiences. Both are accessible from the main content section of the homepage or from the left-hand sidebar.

Technologies & Practices

This section offers users the opportunity to search for information on a wide range of agricultural and related topics, including advice on growing techniques for many types of crops. It also gives details on marketing, livestock, forestry, fishing, and climate change adaptation.

To search for advice, click on 'Technologies' in the left sidebar or the link 'find technologies & practices' on the main page section.

A 'Search & browse' page opens allowing you to either browse by category or enter a keyword. The categories you can search include capacity development, disaster risk reduction, natural resource management and post-harvest marketing. Click on any of the categories to see the list of corresponding technologies.

For example, clicking on 'capacity development' opens a page showing a selection of available resources including 'Beekeeping: How to make protective gear', 'Soil nutrient management in Uganda' and 'Strategies for improved soil and water conservation practices in hillside production systems'. Click on the titles to read the full details.

The technologies page also has a search field where users can enter keywords to find a specific technology or practice.

For example, entering the words 'pest management maize' produces a list of results matching the search terms, including 'Integrated crop management of maize, beans and other smallholder crops in East Africa' and 'Growing soybean and maize in rotation'.

Click on the title of a technology, from either the categories section or the search function, to see a summary of the information, its source, and applicable countries. Click on 'read' to see the full details, or download a pdf file of the full technology which can be read offline, printed and distributed.

The page on 'Growing soybean and maize in rotation' shows that the information comes from Nkoola Institutional Development Associates, is relevant to Uganda, and offers a pdf for download with the full details. One piece of advice recommends that farmers 'buy seed of improved soybean variety with good haulm and grain yield from a reliable seed company. 40–50 kg soybean seeds per hectare is required.'

Other technologies, such as 'Rice transplanting' (http://teca.fao.org/read/7214), bring the information in video format, which you can watch directly from the page.

The exchange groups are an important part of the TECA website. They are online forums where farmers, extension officers, researchers and anyone involved in agriculture can share experiences and ideas.

To participate, users first need to register. Click on 'Register' in the sidebar, fill in the form with an e-mail address, password, and first and last name. Agree to the terms of the site, and enter the code to create a new account.

There are currently two exchange groups available: Beekeeping (also available in French and Spanish) and Uganda. You can specify on the registration form which you would like to participate in.

Click on the group name in the sidebar to view a summary of the group's aims, related events, resources, news and a list of recent discussions.

For example, the Beekeeping Exchange Group has recently been discussing the role of beekeeping for development, and pollination services for sustainable agriculture. The events section mentions the ApiEcoTech Apimondia Symposium,which will be held in February 2012. And the 'news' section contains a report on a recent IFPRI survey on the potential of agricultural technologies. Among the resources are pdf files on basic and advanced beekeeping manuals, and bees and their role in forest livelihoods.

It is not necessary to register to view the entries; any visitor to the site can read the available information. ◀

Resources

Extension & advice

Documents

Strengthening Agricultural Extension and Advisory Services
With the subtitle, Procedures for Assessing, Transforming, and Evaluating Extension Systems, this book (available as a PDF) from the World Bank looks at the steps extension services can take to transform and strengthen their work. The authors, Burton E. Swanson and Riikka Rajalahti, focus on the technical knowledge, management skills, and information services that small-scale farmers need to improve their income and the economies of their communities.
➜ **http://goo.gl/ZUp3C**

ICT to Enhance Farm Extension Services in Africa | ICT to Enhance Impact of Agriculture Development
This briefing paper, prepared by USAID, describes various methods of using ICTs to support and improve agricultural extension services. The authors focus on approaches that are financially sustainable and capable of reaching large numbers of farmers. The authors point out some challenges that exist in many extension programmes, including the translation of information to local languages, low literacy rates, and the need for a good business model to ensure the system is cost-effective.
➜ **http://goo.gl/4XLKn**

Comparative Laboratory Study of 12 Devices for Agriculture Extension

11 FOTOCREDIT

The prices of electronic goods have decreased rapidly in recent years, making cell phones, video recorders and other digital devices affordable for many agricultural extension programmes. But are these products worth the money? Computer scientist and development researcher, Kentaro Toyama, conducted laboratory tests on 12 devices to analyze a number of factors, including cost, ruggedness, and usability. One conclusion from the study was that higher-cost devices do indeed provide richer features.
➜ **http://goo.gl/jmELJ**

Web resources

Agfax

LUC GNAGO / REUTERS

Agfax journalists provide audio for 80 radio stations throughout Africa. Their reports focus on how science and innovation can support farmers and rural development on the continent. Hundreds of interviews, reports and features are available for free on the website for listening online or for download. Topics covered include climate change, crop development and protection, food and nutrition, marketing and soil. Visitors to the site can choose to listen to the latest audio additions, editor's choice, or search by topic or region.
➜ **www.agfax.net**

Agro-Insight
Winner of the 2009 CGIAR science award for outstanding communications, Agro-Insight produces video, radio and printed material to support sustainable agriculture and equitable trade. The project combines the expertise of scientists, communication professionals and artists to develop entertaining and useful methods of delivering agricultural information to small-scale farmers throughout the world. Numerous books, articles and videos of agricultural extension can be viewed and downloaded from the extensive website.
➜ **www.agroinsight.com**

National Agricultural Research Extension Systems
The International Rice Research Institute have compiled a resource of national agricultural research organisations that develop and use extension systems. The resource lists institutes from around the world with direct links to their websites (where available). Around 30 research organisations are listed, among them National Agricultural Research Institute of Papua New Guinea and the International Center for Agricultural Research in the Dry Areas.
➜ **http://goo.gl/Wdlys**

Projects

Using technology to monitor project impact
The Great Lakes Cassava Initiative (GLCI) provides training modules dealing with cassava pest and disease control, cassava multiplication and dissemination, group management and training to work with adult learners. GLCI managers, supervisors and field agents can learn while they are in the field by following courses on laptop computers. One module includes information on how to use a hand-held GPS device to support geographical information systems.
➜ **http://goo.gl/Rw9TK**

Kenya Plant Health Inspectorate Service

ANTONY NJUGUNA / REUTERS

The Kenya Plant Health Inspectorate Service now provides expert seed advice to farmers via SMS. One system is dedicated to maize seeds, and allows farmers to send a short message code (the word MAIZE along with their district name) to receive information on which variety of maize gives the best results in their area. Another service lets farmers check whether their seed provider is licensed, and therefore more likely to provide genuine seeds of an acceptable quality that have been stored properly.
➜ **www.kephis.org**

Podcasting in Zimbabwe
Practical Action have built on their success of using podcasts with farmers in Peru (featured in ICT Update issue 37: http://goo.gl/GonLq) by expanding the idea to Zimbabwe. The podcasts – regularly produced audio files that can be uploaded to MP3 or other audio players, such as a iPod – contain information to help improve the livelihoods of people in remote rural areas. Based in the northern part of Zimbabwe, in areas with no electricity, radio signal or cell phone coverage, the project delivered agricultural, veterinary and medical advice in the local Shona language to 110,000 people in the region.
➜ **http://goo.gl/m8P0U**

Karin Nichterlein
(karin.nichterlein@fao.org) is a research officer at the FAO Office of Knowledge Exchange, Research and Extension (www.fao.org/oek/oek-home/en/)

Extending the reach

Extension & advice

ICTs bring agricultural extension and advisory services closer to farmers who often live far from the main information sources.

What are the main problems involved in delivering agricultural information to millions of small-scale farmers spread all over the world?

➜ Small-scale farmers are usually based in rural areas, far from the providers of agricultural information and advisory services. Over the last decades, there has been insufficient investment in developing extension services, that they are now unable to reach isolated producers and help them to adjust to the challenges they face, improve their organisation and to give them a voice.

While ICTs have developed rapidly, little thought has been given to how accessible they are to rural people. This is particularly challenging given that many semi-literate small-scale producers require information in a format they can easily understand and use. Despite numerous pilot projects demonstrating that ICTs can be used to reach small-scale farmers, the up-scaling of such initiatives to the national level has remained a challenge in many ACP countries.

How do large international organisations such as the FAO reach those farmers?

➜ In the Research and Extension Branch (OEKR), we work mostly with national governments. We assist them to make their research and extension systems more relevant and responsive to the needs of small-scale producers and to promote demand-driven advisory services.

In order to achieve this, we encourage the use of participatory approaches that give people in rural communities, including farmer representatives, a role in assessing and planning extension programmes and services. We also encourage the use of communications tools and methods for development, and we help people to develop the skills they need to use ICTs to connect to others working for the development of agriculture.

How does FAO use technology to reach small-scale farmers?

➜ At OEKR, we have developed a website called TECA [see Bookmark, page 11] where you can find practical information on agricultural technologies and practices that help small-scale producers. It combines a database of technologies with web 2.0 tools that allow discussions on topics relevant to particular countries or on specific themes such as beekeeping. Based on the experiences of a rural user group from Uganda, the platform has been designed so that it can now be easily used either by rural advisors working closely with small-scale farmers or by the farmers themselves.

Is one type of technology – the internet, or cell phones, for example – particularly effective for reaching farmers, or is a combination of technologies necessary?

➜ Cell phones have proven a very effective technology for reaching farmers, especially for sharing market price information and weather details. However, for sharing more complex information and encouraging learning, cell phone use needs to be integrated with the internet and traditional means of communication.

We need a careful, local-level assessment to determine the information needs and conditions. That means assessing what already exists, what is widely accepted by farmers and affordable for them, what sources of information are currently available and which support services and skills exist at the local level, before deciding the most efficient ways of reaching farmers.

How has TECA adapted to technological changes over the years?

➜ When we started TECA, it was simply a system for documenting agricultural technologies. It has since expanded from a database to an open source content management system that has tools that allow commenting technologies and practices, as well as social networking in so-called exchange groups.

We share the system with national partners and together we develop new functions as the need arises and as new developments emerge. We have been collaborating with rural partners who use cell phones to link TECA's content to the farmers through their community workers. We had previously been involved in a similar project in east Africa where we supported networks that combined the internet, cell phones and information boards in villages to share market price information and market offers. The lessons we learned from this helped us with the further development of TECA's interactivity.

How do you see the future of extension services?

➜ I am convinced that databases and communication technologies are essential tools in future extension service, but they cannot completely replace face-to-face interaction between farmers and extension agents. We know from our experiences with TECA that face-to-face meetings or phone calls are often necessary in the initial phase of setting up an online-community. People who know each other personally are more likely to exchange through online discussion groups.

The role of extension officers has widened to include services such as mediation in situations where there is conflict over natural resources. They also support institutional development processes that cannot easily be replaced by ICTs alone, but call for a more personal interaction. ◀

MIKE GOLDWATER / ALAMY


ZOHRA BENSEMRA / REUTERS

A boost for agricultural information

A major telecommunications association has announced a project to deliver agricultural information via cell phones to two million farmers in developing countries. The GSMA, which represents around 800 cell phone network operators around the world, launched the mFarmer Initiative at a conference in Cape Town. With funding from the Bill and Melinda Gates Foundation, the association will encourage its members to enter partnerships with public and private sector agricultural organisations to provide advisory services to the world's poorest farmers.

'There are over 2.3 billion people living on less than US$ 2 day, a large number of whom are rural smallholder farmers in developing countries and who face many issues which inhibit their agricultural productivity and limit their incomes,' said Chris Locke, executive director of the GSMA Development Fund. 'Through the mFarmer Initiative Fund, the GSMA Development Fund's mAgri Programme will accelerate the provision of high-quality agricultural information services through mobile and by 2013 we aim to provide two million farmers in developing countries with an invaluable and transformative business resource.'

The association hopes that the extra boost to agricultural information services will lead to an increase in farmers' incomes and improve food security in rural areas. Cell phone technology provides a cost-effective and scalable solution to address these challenges.

➜ Visit the mFarmer Initiative website: http://goo.gl/sdtFl

Shared technology

An initiative supported by UNDP aims to give phone numbers to more than three million people in Africa and South Asia. Users of the system do not need their own cell phone, or even a SIM card. Instead, they can make use of any cell phone to log on and call or send SMSes from their individual number. The system, known as Cloud Phone, was developed by the social enterprise company, Movirtu, and will be introduced to 12 countries by early 2013 through the Business Call to Action (BCtA) programme.

The team behind the project expects that most subscribers will be women in rural communities who will be able to use their own unique number to make and receive calls, and access information and services such as banking or agriculture support.

'It is a basic fact not everyone in the world can afford their own mobile phone,' said Ramona Liberoff, of Movirtu. 'Our goal is to increase the earning potential of those on US$ 1-2 a day by saving money and allowing them to access the economic benefits of a full mobile identity.'

➜ For more, see the BCtA website: www.businesscalltoaction.org


NOOR KHAMIS / REUTERS

Support for reform and investment

A recent evaluation of the World Bank's ICT projects shows that the Bank's support has increased access to communications technology in difficult environments. The Bank's efforts have also led to greater reforms of the telecommunications sector, increased competition and improved investment compared to countries where it was not active. The study, Capturing Technology for Development by the Independent Evaluation Group (IEG), acknowledges the strong results achieved by the International Finance Corporation (IFC) – the private sector arm of World Bank – in ACP countries, helping small-scale entrepreneurs become major operators in cell phone network provision.

From 2003 to 2010, the World Bank invested US$ 4.2 billion, with around US$ 2.9 billion going to the poorest countries. However, the bank failed to meets its targets in areas where telecommunications services were not commercially attractive, leaving millions of people in the most underserved parts of the world with limited access to ICTs. The report's authors recommend that the World Bank shift its priorities in future efforts to encourage competition and further policy reform in client countries. The Bank should also support more public-private partnerships to develop broadband internet services and increase its focus on building ICT skills.

Director-General of the IEG at the World Bank, Vinod Thomas, confirmed the organisation's future commitment to technology: 'ICT is an area where the Bank Group can continue to play a catalytic role, especially in ensuring access for the poorest

➜ Read the full report: http://goo.gl/qO4uG

The history of web 2.0...

At the time of writing, the term 'web 2.0' has less than a year to survive, the exact date of its passing being 1 October 2012. At least, that's the prediction of technology journalist, Christopher Mims, in a post for the Massachusetts Institute of Technology's magazine, Technology Review. Mims points out that the tools of web 2.0 – social networking, blogging, online mapping, etc. – will not disappear. Instead, he has used Google Trends to produce a graph showing how often the phrase 'web 2.0' has been used in online searches. The phrase was coined by publisher Tim O'Reilly in 2003, but only started to become popular in 2005, with usage peaking in 2007. Since then, use of the term has declined rapidly, and if current trends continue, web 2.0 will disappear (from online searches, at least) on the predicted date. .

➜ Read the original article: http://goo.gl/PE117

... and the demise of personal computers

ISTOCK

In a recent blog post, a developer who worked on the first IBM personal computer declared: 'When I helped design the PC, I didn't think I'd live long enough to witness its decline.' Although, Mark Dean, now the chief technology officer for IBM in the Middle East and Africa, believes PCs will still be used, he says, 'they're no longer at the leading edge of computing. They're going the way of the vacuum tube, typewriter, vinyl records, CRT and incandescent light bulbs.'

His claims appear to be backed up by news that Hewlett-Packard, the world's biggest PC manufacturer, will stop manufacturing PCs. Steve Jobs, who recently announced his resignation as CEO of Apple, talked earlier this year about the 'post-PC' era. But his opinion may be biased since he made the comment at the launch of the iPad 2.

While sales of tablets and smartphones increase rapidly, sales figures for PCs continue to grow too (although at only 2% per year). So maybe it is Michael Dell who is right when he said on Twitter: 'Like Mark Twain, the reports of PC's death have been greatly exaggerated.' But then again, as chief executive and founder of Dell Inc, his opinion might be biased too.

➜ Read Mark Dean's original blog post: http://goo.gl/hiu2I

Mobile newspaper industry

As cell phone usage grows rapidly in Africa, newspapers throughout the continent can make use of mobile networks to deliver their content straight to millions of readers' phones. In an effort to help newspaper publishers expand into cell phone services, the World Association of Newspapers and News Publishers (WAN-IFRA) and the African Media Initiative (AMI) have published a guidebook with practical tips and expert advice on how to make the best of the technology. Mobile Media Services At Sub-Saharan African Newspapers: A Guide To Implementing Mobile News And Mobile Business, includes analysis and case studies gathered from prominent newspapers around Africa, including the Daily Nation in Kenya and the Mail and Guardian in South Africa.

The publication also contains examples of other cell phone services, and points to the successes of agricultural information systems such as the mFarm and iCow apps from the iHub in Nairobi.

CEO of AMI, Amadou Mahtar Ba, said: 'For news organisations operating in Africa to stay relevant and grow, I strongly believe they need to adapt to new technologies, mobile telephony in particular, given the phenomenal adoption and penetration of this technology across the continent.'

The guidebook includes chapters on how to reach new readers, generate revenue and adapt mobile services to fit in within a broader digital media strategy. 'We hope this handbook will help African media get started with mobile publishing,' said lead author, Kristina Bürén, research director at WAN-IFRA, 'by inspiring and by giving practical tips to help media companies avoid some of the possible hurdles along the way.'

➜ Download the guidebook for free (PDF): http://goo.gl/ELe9b

SIMON MAINA / AFP FILES / AFP

4.6 billion cell phones in use worldwide in 2010. The number of people with cell phones is lower as some own two or more phones. http://goo.gl/t9VeZ

12 different heavy metals are used in the manufacture of a single cell phone, including platinum, gold, silver and palladium. http://goo.gl/gLD9R

3.9 metric tons, the amount of gold in the 130 million cell phones retired each year in the US. Only 1% is recycled. http://goo.gl/gLD9R

Social connections

Brenda Zulu
(brendazulu2002@gmail.com) is an ICT journalist and blogger based in Zambia (http://brendait.blogspot.com)

Websites

I have two e-mail accounts, one with Yahoo and one with Gmail. I use Yahoo mail for Dgroup discussions, e-mail newsletters, and to communicate with family and friends. I use Gmail for business, and download the mails to my Microsoft Office Outlook inbox. I also use Google Talk to chat, and Gmail SMS, which lets me send free SMS messages from my Gmail account. Google Chrome is my main browser, but also have Mozilla Firefox and Internet Explorer installed on my computer.

I use Delicious to bookmark websites. Among these is FreshBooks, which lets me manage my accounts and painlessly create invoices for clients. My favourite site is The Communication Initiative Network, which puts communication and media at the centre of social and economic development. As a result of the information on the site, I have travelled around the world to events, provided specialised web 2.0 services, and been granted scholarships. I also use the internet to listen to online local radio and international broadcasters including the BBC and Al-Jazeera.

➜ **www.delicious.com**
➜ **www.freshbooks.com**
➜ **www.comminit.com**

Blogging

As a blogger, I am careful to tag and add metadata to my online content to make it easier for people to find through search engines. I also find folksonomies useful, which are created through collaborative tagging.

ROEL BURGLER / HH

I provide live blogging services to organisations, where I deliver rolling coverage of conferences and symposia. For this, I often use video blogging (vlogging) and upload content to YouTube or BlipTV.

When I write documents in collaboration with other people, I use Unyte, part of IBM's LotusLive suite of tools. This is especially useful when I work with people in other countries because I can let them see my desktop over the internet and we can talk about any changes either of us wants to make to the document.

For photo blogging, I use Flickr and Picasa to publish pictures on line. And I use the free open source program, Audacity, to create and edit audio files, and then export them as MP3 files. I can then share these using AudioBoo. I believe that sound is social and I enjoy creating and developing all sorts of sound files for social networking.

➜ **www.youtube.com**
➜ **www.blip.tv**
➜ **www.lotuslive.com**
➜ **www.flickr.com**
➜ **www.picasa.com**
➜ **http://audacity.sourceforge.net**
➜ **www.audioboo.fm**

Crowd-sourcing

I recently had the privilege of taking part in an election-monitoring project where I used content from the open source Ushahidi platform to get ideas for stories, and have used the content there to write articles on the use of social media, such as Twitter and Facebook, in the news. It would be nice if organisations could make more use of this crowd-sourcing tool to map out their work, especially in rural areas, and gather information using SMS short codes.

➜ **www.ushahidi.com**

Social networking

I use Ping.fm to update all my social networks at once, including Twitter, Facebook, Google Talk, Yahoo, Google Buzz, LinkedIn and Blogger. I also use TweetDeck to update my Twitter, LinkedIn, and Facebook accounts. I like TweetDeck because I can share photos and videos easily – when I have a good internet connection.

I use all the above social networking tools for my work because I create and manage social media content for clients. Other tools I use for this are WordPress, Blogger, Joomla and Drupal, most of which are open source platforms.

I teach people how to make the best use of social networking and share many of the documents I create including PowerPoint presentations, Word documents and PDF files, on SlideShare where they can be easily referenced, retrieved and promoted.

I love the My News feature on Digg. Digg is a place for people to discover and share content they find on the web, and I use My News to recommend articles. I use Instapaper to mark web pages that I want to read later.

➜ **www.ping.fm**
➜ **www.tweetdeck.com**
➜ **www.joomla.org**
➜ **www.drupal.org**
➜ **www.slideshare.net**
➜ **www.digg.com**
➜ **www.instapaper.com**

Future

I back up my work to a private blog on line and onto a 500 MB external drive. But I am hoping to get a second hard drive for my laptop so that I can run it with a Linux operating system. I like to support open source software, and intend to use it more in the future.

I hope to get a Samsung Galaxy Tab 10.1 soon too. I like this because it makes use of the cell phone network to connect to the internet. Where I live, there are not so many WiFi connections. I really think that the future of technology in Africa will be mobile, so any mobile device will be popular on the continent. ◀

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